

**ABSTRACT**

The invention relates to a microwave tube comprising an electron gun generating an electron beam in a cylindrical microwave structure of the tube. The microwave structure delivers a microwave at one output. A collector for collecting electrons from the beam comprising at least one electrode that is mechanically coupled to the microwave structure via a dielectric, the mechanical coupling forming a radial waveguide for propagating spurious microwave radiation ( $P_r$ ) from the tube. In order to attenuate the spurious radiation from the tube, the radial waveguide ( $W_g$ ) includes at least one quarter-wave microwave trap having, at least at the operating frequency  $F$  of the tube, an open circuit for the microwave propagating in said radial waveguide for propagating spurious radiation.